ABHIJEET ANIL KHANDAGALE

1. Field of research:

Effects of Space Weather on Terrestrial Systems.

2. Name of institute:

G.H. Raisoni College of Engineering.

3. Pursuing degree:

Masters in CAD/CAM (Mechanical Design)

4. Completed degree (in descending order):

Bachelors in Engineering (Mechanical)

5. Trainings Taken (in descending order):

- MS Excel, Moodle LMS – Proficient.
- Embedded C, Wordpress - Competent.
- Certificate in Intellectual Property Rights Management.
- Certificate in Cargo Management.
- Certified Black Belt (Dan I) in Shotokan Karate.
- Certified Boy Scout (upto Grade Three)

6. Publications (in descending order):

- Sangludkar S., **Khandagale A.**(2014) '**Controlled Mobile Platform for Service based Humanoid Robot'** International Journal of Mechanical Engineering and Robotics Research – 2014; Issue 3 Volume 2, ISSN 2278014.
- **Khandagale A.**, Gupta G. (2012) '**An Alternative Communications Model for Harsh Spaceweather**' IEEE Xplore, ISBN 978-1-4673-4687-0.
- **Khandagale A.**, Gupta G. (2011) '**Communication Blackout: Causes and Measures**' International Journal of Advanced Engineering Sciences and Technology. Issue 3 Vol 1, pg 050-051, ISSN 22307818.

- **Khandagale A.**, Sangludkar S. (2011) '**Hybrid Two Wheelers for Indian Roads'** International Journal of Advanced Engineering Sciences and Technology – 2011; Issue 3 Volume 1, pg 046-049, ISSN 22307818.

7. Oral presentation (in descending order):

- Open Source Automobiles – FabFest / Fab11, MIT, Boston. (2015)
- Maker Culture in India - Panel Discusssion at Maker Faire, Bengaluru. (2015)
- Building India's First Batpod – Consortium, VNIT, Nagpur. (2014)

8. Poster presentations (in descending order):

- Poster on 'Great Indian Power Failure: Need of GIC study' **International Symposium on Solar-Terrestrial Physics** (STP13), held at Xi'an, China (2014).
- Poster on 'Study of Seismological Effects due to Solar Activity' **International Symposium on Solar-Terrestrial Physics** (STP 12), held at ISSER, Pune, India (2012).

9. Schools/Workshops Attended (in descending order):

- CCMC Spaceweather Concepts and Tools. (2016)
- Entrepreneurship Development Programme. (2013)
- Hands-on-Training on Embedded Systems. (2011)

10. Purpose of study in the research field (in 1000 words):

My major domain of research has been the impact of spaceweather on the terrestrial technology systems and automation of mechanical systems. My growth and exposure in these domains has been due to my personal interest in solar physics and my coursework in mechanical engineering.

Terrestrial Impacts of Spaceweather

It involves study of effects of Spaceweather on technology systems. I've dedicated over 4 years in the study, apart from my coursework. The research involves development of a models which can be used to shield/warn technology during harsh Spaceweather conditions. Two papers under this domain concern with satellite communications modelling and recently contributing towards the Solar

Shield project by Dr. Antti Pullikenen, GSFC-NASA which aims to shield power grids from possible GIC effects to implement in India.

Automated Mechanical Systems

I also have extensively worked on embedded systems including design of various mechanical systems. One major project was carried out in TechnOArc Projects, a local startup; which involved prototyping of a humanoid robot. Apart from these, an automobile project was developed for security forces, which was my undergraduate thesis work. Most of this research work has been done under the guidance of Dr. S. Bagde, YCCE and also involved a development of FMS automated system in the laboratory.

Owing to the expertise in these domains, my focus is now to be a part of projects which combine the knowledge of systems (hardware) design and spaceweather physics. I'm looking to build a research career in the same, with the initial steps already taken. I've now applied for a PhD degree in Space Sciences at University of Michigan.

Other details:

11. Awards & Honour (i.e.NET/SLAT/JEST/GATE/Any equivalent):

- GHRCE Alumni Achiever Award - 2015
- GHRCE Student Travel Grant for STP 13 Conference.
- GHRCE Student Conference Grant for IEEE AESS ESTEL Conference.
- Financial Assistance from SCOSTEP for STP12 *and* STP13 *Conferences.*
- EO Global Student Entrepreneur Award - Zonal Finalist.

12. Any other examinations (i.e. IELTS/TOFEL/ any equivalent)

- GRE – 301 (V:147; Q:154; A:3.5)
- TOEFL – 96

13. Computer Operating and/or Programming Skill:

- Embedded C – Beginner
- OS – Linux, MacOS, Windows – Advanced
- MATLAB - Beginner

14. Language Skill

- English, Hindi, Marathi – Proficient
- French - Beginner

15. Permanent communication address:

Plot No. 4, Ramanagar, Behind Renuka Vihar Colony, Rameshwari, Ringroad, Nagpur, MH, India – 440027

16. Secondary communication address:

Same as Above.

17. Permanent e-mail address:

hello@abheejit.com

18. Secondary e-mail address:

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19. Permanent contact number:

+919766072308

20. Secondary contact number:

+919423104119

21. Write here as mentioned on ccmc.gsfc.nasa.gov/staff/krishnarao.php

Abhijeet is a technology innovator, and a Masters student at Nagpur in G.H. Raisoni College of Engineering. He is studying Design Engineering (CAD/CAM) in the 2nd year of the program.

He has developed several projects under the guidance of experienced personnel, the work being concentrated on Robotics and Mechanical Design. He worked as an intern with the Laboratory of Applied Research in Electronics in Bombay which kick started his career. As a research student, he got intrigued by Solar Physics and has been dedicated to the domain for 5 years now.

His research involves development of a models which can be used to shield/warn technology during harsh Spaceweather conditions. Two papers under this domain concern with satellite communications modelling. He is recently contributing towards the Solar Shield project by Dr. Antti Pullikenen, GSFC-NASA which aims to shield power grids from possible GIC effects to implement in India.

Apart from this, he constantly delivers talks, and workshops over these domains. Abhijeet is also a student entrepreneur and has founded 2 companies so far, well know for his innovation – Project Lincoln – Batpod, which he spoke about at FabFest, MIT in Boston.